



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/542,042	03/31/2000	Jae-yoon Sim	SEC.701	4063

7590 01/09/2004  
Jones Volentine L L P  
12200 Sunrise Valley Drive  
Suite 150  
Reston, VA 20191

EXAMINER

KUMAR, PANKAJ

ART UNIT	PAPER NUMBER
----------	--------------

2631

DATE MAILED: 01/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/542,042

Applicant(s)

SIM ET AL.

Examiner

Pankaj Kumar

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 and 16-22 is/are allowed.
- 6) ☒ Claim(s) 11 and 12 is/are rejected.
- 7) ☒ Claim(s) 13-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 10/10/2003 have been fully considered but they are not persuasive.
2. As per applicant's argument about demultiplexing, channel id, CRC and tail are all three packed or multiplexed within one packet since multiple data items are put together in one packet which is identifiable by the packet header. When a process retrieves the packet header, it can then retrieve data items like the channel id, CRC and tail contained within that same packet. Hence, during retrieval, the opposite of packing occurs and hence the opposite of multiplexing and hence demultiplexing occurs.
3. As per applicant's argument about restoring lost high frequency components, an original signal is at the speed of light. Then its speed is decreased to 6.5 MHz. Then the multiplexer restores some of the speed and hence some of the high frequency components by increasing the speed to 20.1312 MHz.
4. As per applicant's argument about multiplexing, applicants again argue that there is no demultiplexed data nor restored data. These arguments are not persuasive for the reasons already discussed such as those in the last two paragraphs.

### ***Response to Amendment***

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2631

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 11 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Zhung et al. USPN 5875007.

7. As per claim 11, Zhung teaches a high frequency equalizer, comprising: a restoring circuit for demultiplexing input data (Zhung fig. 3: 31) into a plurality of input data items (Zhung fig. 3: 32, 33, 36, 37) each having a time difference the same as period of the input data (Zhung fig. 4: time difference between rising and falling edges of 42, 45 and 46 is the same as the period of 41 between its rising and falling edges), restoring lost high frequency components of the plurality of demultiplexed input data items (Zhung figs. 1, 2: 12 is 6.5MHz while 13 is 20.1312MHz), and outputting restored input data items in response to restoring clock signals (Zhung figs. 1, 2 output of 13); and a multiplexer for multiplexing the restored input data items (Zhung figs. 1, 2: 15) and sequentially outputting multiplexed data items one by one as restored input data (Zhung figs. 1, 2: output of 15), in response to the restoring clock signals (Zhung figs. 1, 2: 15 is in response to 110 and/or 13 since 15's input is through 13).

8. As per claim 12, Zhung teaches a high frequency equalizer, as recited in claim 11, wherein the restoring circuit comprises: a demultiplexer (Zhung fig. 1: 19, 21, inverse multiplexing or demultiplexing) for demultiplexing the input data (Zhung fig. 2: 103 is part of the entire multiplexed data) into the plurality of input data items (Zhung figs. 1, 2: payload, channel id, CRC and tail are all based on the header) in response to the restoring clock signals (Zhung figs. 1, 2: same 20.1312 clock rate in 110 as in 13); and a plurality of unit restoring

Art Unit: 2631

circuits operating in response to the corresponding restoring clock signal (Zhung fig. 1: 23, 24, 25), for receiving current input data items of a current time (Zhung fig. 4: time of tail) and previous input data of a previous period of time (Zhung fig. 4: CRC, payload, channel id and header are all before tail in terms of time), restoring the lost high frequency a component of the current input data item (Zhung fig. 1: input data went from 6.5 MHz to 20.1312 MHz and thus high frequency component was restored), and outputting restored input data items (Zhung fig. 1: output of 21 and/or 23 and/or 24 and/or 25).

*Allowable Subject Matter*

9. Claims 1-10 and 16-22 are allowed.

10. Claims 13, 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: The art of record does not suggest the respective claim combinations together and nor would the respective claim combinations be obvious with the following underlined portions:

12. and a high frequency equalizer for restoring lost high frequency components of input data input through the input and output terminal in response to the restoring clock signals and outputting the restored input data

13. and a second current output transistor commonly connected to a third output terminal of the first current amplifying circuit and a fourth output terminal of the second current amplifying circuit, for outputting a second difference current proportional to the difference between the currents output from the third and fourth output terminals.

Art Unit: 2631

***Conclusion***

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

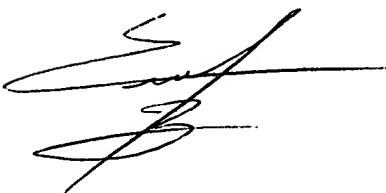
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pankaj Kumar whose telephone number is (703) 305-0194. The examiner can normally be reached on Mon, Tues, Wed and Thurs after 8AM to after 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (703) 306-3034. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

PK

A handwritten signature in black ink, appearing to be 'Pankaj Kumar', with a long horizontal stroke extending to the right.